Title (en)

SPECTRAL CALIBRATION OF DIFFERENT FLUORESCENT DYES TO BE USED IN CONJUNCTION WITH A POLYNUCLEOTIDE SEPARATION APPARATUS

Title (de)

SPEKTRALE EICHUNG VON VERSCHIEDENEN FLUORESZIERENDEN FARBSTOFFEN ZUR VERWENDUNG IN EINER VORRICHTUNG ZUR TRENNUNG VON FLUORESZIERENDEN POLYNUCLEOTIDEN

Title (fr)

ETALONNAGE SPECTRAL DES DIFFERENTS COLORANTS FLUORESCENTS POUR UTILISAGE DANS UN APPAREIL DE SEPARATION DE POLYNUCLEOTIDE FLUORESCENT

Publication

EP 1101104 B1 20060510 (EN)

Application

EP 99945645 A 19990909

Priority

- US 9920836 W 19990909
- US 15417898 A 19980916

Abstract (en)

[origin: WO0016087A1] The invention relates to methods, compositions, and systems for calibrating a fluorescent polynucleotide separation apparatus. One aspect of the invention is multiple color calibration standards and their use. A multiple color calibration standard is a mixture of at least two polynucleotides of different length, wherein each of the polynucleotides is labelled with a spectrally distinct fluorescent dye. Another aspect of the invention is to produce total emission temporal profiles of multiple color calibration standards for use in calibrating fluorescent polynucleotide separation apparatus. The peaks corresponding to the fluorescently labelled polynucleotide in the total emission temporal profile may be detected using a peak detector that is driven by changes in the slopes of the total emission temporal profile. Calibration of fluorescent polynucleotide separation apparatus with various embodiments of the methods of the invention includes the step of identification of the labelled polynucleotide of the multiple color calibration standards. The process of spectral calibration of fluorescent polynucleotide separation apparatus using multiple color calibration standard may include the step of the estimating (extracting) of the dyes' reference spectra, using information from the peak detection process performed on the total emission temporal profile. Other aspects of the invention include systems for separating and detecting fluorescently labelled polynucleotide, wherein the system is designed for spectral calibration in accordance with the subject calibration methods employing multiple color calibration standards. Another aspect of the invention is methods and compositions for detecting the flow of electrical current through a separation channel of a fluorescent polynucleotide separation apparatus. These methods and compositions employ monitoring dyes. Monitoring dyes are fluorescent dyes that are spectrally distinct from the dye on the polynucleotide intended to convey genetic information, e.g., fluorescent polynucleotide sequencing reaction products.

IPC 8 full level

G01J 3/02 (2006.01); **G01N 27/447** (2006.01); **C12M 1/00** (2006.01); **C12N 15/09** (2006.01); **C12Q 1/68** (2006.01); **G01N 21/64** (2006.01)

CPC (source: EP US)

G01N 27/44726 (2013.01 - EP US); Y10T 436/10 (2015.01 - EP US)

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

WO 0016087 A1 20000323; AT E326009 T1 20060615; AT E384948 T1 20080215; AU 5821099 A 20000403; AU 748681 B2 20020613; CA 2341740 A1 20000323; DE 69931262 D1 20060614; DE 69931262 T2 20060907; DE 69938065 D1 20080313; DE 69938065 T2 20090122; EP 1101104 A1 20010523; EP 1101104 B1 20060510; EP 1178305 A2 20020206; EP 1178305 A3 20040114; EP 1178305 A8 20020522; EP 1178305 B1 20080123; JP 2002525576 A 20020813; US 2002125136 A1 20020912; US 2004195101 A1 20041007; US 2006102479 A1 20060518; US 2010096548 A1 20100422; US 6821402 B1 20041123; US 6991712 B2 20060131

DOCDB simple family (application)

US 9920836 W 19990909; AT 01125166 T 19990909; AT 99945645 T 19990909; AU 5821099 A 19990909; CA 2341740 A 19990909; DE 69931262 T 19990909; DE 69938065 T 19990909; EP 01125166 A 19990909; EP 99945645 A 19990909; JP 2000570573 A 19990909; US 15417898 A 19980916; US 32362005 A 20051230; US 64486409 A 20091222; US 82985304 A 20040422; US 92779101 A 20010810